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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/814,360

04/01/2004

Paul V. Cavallaro

84-125

7768

23523

7590

02/16/2006

NAVAL UNDERSEA WARFARE CENTER  
DIVISION NEWPORT  
1176 HOWELL STREET, CODE 000C  
BLDG 112T  
NEWPORT, RI 02841

EXAMINER

FIELD, LINDA PENA

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/814,360	CAVALLARO, PAUL V.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Linda P. Field	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-19 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6 and 8 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Remarks/Arguments***

1. Claim 9 is cancelled and is no longer considered.
2. Applicant's arguments filed December 19, 2005 have been fully considered but they are not persuasive. On page 16, Applicant suggests that Oplinger only shows a flat sample not an axisymmetric sample as seen in figure 1 with side views of ASTM D638 and ASTM D3039. Examiner disagrees, as seen in all three illustrations of figure 1, the samples are symmetrical about the axis and the flatness is not evident in at least the third illustration, Streamline, of figure 1.
3. Additionally, applicant suggests that an axisymmetric streamlined specimen has non-obvious advantages when testing brittle materials. Examiner points out that Oplinger discloses an industry standard specimen for high-modulus materials and a specimen for low-modulus materials.
4. In light of the above comments and in addition to the previous Office Action, Claims 1, 2, 3, 6 and 8 are rejected as follows.  
  
Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oplinger, et al (On the Streamline Specimen for Tension Testing of Composite Materials). With respect to Claim 1, Oplinger teaches an axisymmetric first end section, an axisymmetric second end section and an axisymmetric gauge section positioned centrally between said axisymmetric first end section and said axisymmetric second end section, wherein said axisymmetric first end section adjoins said axisymmetric gauge section by a first variable curvature transition fillet, and wherein said

axisymmetric second end section adjoins said axisymmetric gauge section by a second variable curvature transition fillet. Figure 1 illustrates the various specimen types of interest and includes a bowtie shaped specimen which has the elements of Claim 1. Oplinger lacks a tensile specimen with a surface stress concentration factor close to unity. However, Oplinger discloses that long slender shapes with gradual tapers are required to avoid shear failures in tension test specimens. The bow tie shape was introduced in 1969 and the stress analysis results offer a means of drawing conclusions about the effect of taper angle (see page 533). Oplinger further reveals the specimen types being subjected to significant stress concentrations. The ideal specimen design as revealed by Oplinger is one which minimizes shear stress and tensile stress peaks in the tapered region and avoids the bonded tabs, where adverse environments make tab failures unavoidable (see page 539). The impetus for developing boundary shapes would be for eliminating stress concentrations (see page 539). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to develop a tensile specimen with a surface stress concentration factor close to unity. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

5. With respect to Claim 8, Oblinger teaches uniform axial stress fields existing within and adjacent to the gauge section. (Oblinger discloses a streamlined specimen shapes which have the capability for minimizing stress peaks responsible for adverse test results, see page 532.))

6. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oplinger, et al ("On the Streamline Specimen for Tension Testing of Composite Materials") in view of Hiyoshi (6460418).

7. With respect to Claim 2, although Oplinger does not elaborate on a first and second collet, it is inherent that a first and second collet is part of the specimen given that a first and second collet is utilized in order to attach the specimen to conduct tensile tests. Hiyoshi teaches a first collet positioned substantially near a free end of said axisymmetric first end section and a second collet positioned substantially near a free end of said axisymmetric second end section. Test specimen 2 has a first collet and second collet as shown in Figures 1-5. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to utilize a first and second collet in the specimen for the purpose of conducting tensile tests. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

8. With respect to Claim 3, Hiyoshi teaches a first load transfer region defined by said first shoulder and said axisymmetric first end section, and a second load transfer region defined by said second shoulder and said axisymmetric section wherein said first shoulder and said second shoulder are oversized load bearing shoulders. (Figures 1-5 illustrate the oversized load bearing shoulders which eliminate the possibility of a bearing stress-induced fracture within the first load transfer region and the second load transfer region prior to failing said axisymmetric gauge section.)

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oplinger as applied to claim 1 above, and in view of Whatley (5,286,108).

10. With respect to Claim 6, Oplinger lacks a first and second threaded portions positioned near the free ends of first and second sections, it is inherent that a first and second threaded portions are part of the specimen given that threaded portions for test specimen are commonly known and used in the art for conducting specimen tensile tests. Whatley teaches a first threaded portion positioned near a free end of axisymmetric first end section and a second threaded portion positioned near a free end of axisymmetric second end section. (External threads 43 are formed on the outer surface of test specimen receiving portion 30, Column 2, lines 60-61.) It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to utilize a first and second threaded portions in the specimen for the purpose of conducting tensile tests. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

12. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda P. Field whose telephone number is 571-272-6001. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LPF

  
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SUPERVISORY PATENT EXAMINER  
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